Office of Financial Management

A STRATEGY FOR
RISK MANAGEMENT IN CAPITAL CONSTRUCTION

December 1998

Section 1
Executive Summary

MAJOR CONSTRUCTION PROJECTS, whether undertaken by the public or private sector, inevitably involve a certain degree of financial risk. The state of Washington, which finances the construction of facilities ranging from school buildings to state prisons, has a clear interest in managing risks that can increase project costs and lead to litigation.

In March 1998, the Legislature directed the Office of Financial Management (OFM) to convene a work group charged with developing a strategy for managing financial risk associated with state construction projects. In accordance with this mandate, OFM established the Risk Management Committee, which included representatives from state agencies, higher education institutions, legislative staff, and the design and construction industries. Committee members met from May through September 1998 to review state policies, best practices, and case studies of various construction projects. Based on this review, the Committee developed a series of recommendations that focus on budgeting, personnel, training, accountability, and results.

This report represents the fulfillment of the Committee's charge under Substitute Senate Bill 6455. More work will be needed to develop a working plan that can be implemented by all state agencies and institutions. However, the recommendations contained in this report lay the foundation for a comprehensive capital construction risk-management strategy for Washington State.

Major Findings

State construction projects receive a significant amount of public attention due to the visibility of any activity financed with public tax dollars. Although this environment results in a high profile for any problems, the number of projects that run into difficulty and result in large claims is relatively small compared to the number of projects the state implements every year. For example, the Department of General Administration handled over 2,200 projects valued at over $2 billion in the ten-year period ending in 1998. The amount of claims paid over the same period of time amounted to $8.4 million, or approximately *four-tenths of 1 percent* of the total construction value.

Despite this general record of success, there is still room for improvement in state efforts to manage risks associated with construction projects. In its deliberations, the Risk Management Committee identified 15 common factors that can jeopardize the success of state projects, including the need for a standard process for managing risks, additional staff training, changes in current hiring practices and remuneration, and other issues discussed in this report.

The Committee did not identify one ideal method for preventing state construction projects from experiencing difficulties. There are, however, some guiding principles that can lead to successful project management. These principles, if implemented faithfully and consistently, have the potential of significantly improving the system of delivering state construction projects.

Summary of Recommendations

The recommendations proposed by the Risk Managment Committee fall into three major categories. Most of the recommendations are administrative in nature and none require significant policy changes. Actions that can be implemented quickly are listed first. The longer-term administrative measures will require more time to plan and execute. Recommendations requiring legislation are listed last, and may also require some time to put into action.

Near-Term Actions

- **Project Definition:** Agencies should implement measures that will ensure the clear definition of the scope of any project during the predesign phase with a limitation on significant program changes that increase costs once the design budget is approved by the legislature.
- **Training Consistency:** Reconfigure current training programs for project management to be consistent and directed at developing specific skills. Recognized Project Management and Risk Management organizations should conduct some of these training programs.
- **Partnering:** The principles of partnering, emphasizing proactive efforts by all members of a project team to avoid disputes, should be adopted as standard procedure for most state construction projects.
- **Staff Empowerment:** Project managers should be given more authority to make decisions to expedite a project within established limitations.
- **Accountability and Responsibility:** Project managers should be held responsible for keeping a project on track according to an approved budget, scope, and schedule. Agencies should institute a "single-source responsibility" within the agency from the inception of a project to its completion. Furthermore, project managers must have the authority commensurate with this responsibility.

Longer-Term Measures

- **Hiring:** The state should adjust the pay scale for staff involved in capital construction to be competitive with the private sector as well as consider hiring professional project managers trained in this field.
- **Certification and Formal Training:** Continuing education and training programs, recognized by professional organizations, should be required for agency supervisors and staff involved in capital construction programs.
- **Consistency of Training and Technical Information:** As a longer-term measure, training and professional information should be coordinated by the Department of General Administration and standardized throughout state government.

Proposed Statutory Changes

- **Responsible Bidder Criteria:** To guard against unscrupulous or incapable contractors, the Legislature should consider adding criteria for pre-qualifying "responsible" bidders on public works projects, similar to criteria used in awarding goods and services contracts.
- **Streamlining the Permitting Process:** The Legislature should look for ways to reduce delays in obtaining permits from other government agencies, counties, and municipalities - which can increase project costs.

As previously noted, the Committee's recommendations are intended to be a starting point for a comprehensive risk-management strategy for Washington State. The Office of Financial Management and the majority of agencies and institutions are already discussing some of these recommendations with the intent of implementing them in the near future. The Committee recognizes that the successful application of all of these recommendations will require flexibility and practical judgment to reflect the different projects and issues faced by the different agencies.

Section 2

Introduction

THE PROCESS OF DESIGNING and constructing a building is inherently risky. There are risks associated with changing economic and market conditions; there are risks related to governmental regulations, zoning, and environmental requirements. There are also risks such as topography, geology, soils, weather and natural disasters. And finally, there are risks resulting from the inability of contractors, consultants and other members of the project team member to perform assigned tasks.

The state of Washington, which finances the construction of facilities ranging from school buildings to state prisons, has a clear interest in managing risks that can increase project costs and lead to litigation. In March 1998, the state Legislature approved Substitute Senate Bill 6455, a section of which calls for the development of a comprehensive strategy to manage risks associated with state capital construction projects.

> **Section 54: "**The office of financial management will convene a working group of state agencies, higher education institutions, the office of the attorney general, and representatives of the design profession and construction industry *to develop a strategy to manage the risks and reduce the potential for claims and litigation associated with state construction projects.* This strategy shall include the enumeration of best practices for the management of project risk and conflicts, in order to minimize future expenses related to construction claims. A report on the findings and recommendations of this working group will be presented to the house of representatives capital budget committee and senate ways and means committee by October 31, 1998."

This report represents the fulfillment of the Legislature's charge, and takes the first step toward a consistent approach to evaluating and managing risks on state-funded capital projects. The Risk

Management Committee met from May through September 1998 to review state policies, best practices, and case studies of various construction projects. Based on this review, the Committee developed a series of recommendations that focus on budgeting, personnel, training, accountability, and results.

Composition and Goals of the Committee

The Risk Management Committee met for the first time on May 28, 1998, to establish goals and objectives. As required under the legislation, the Committee included representatives from state agencies, higher education institutions, legislative staff, and the design and construction industries.

Composition of the Risk Management Committee	
• Office of Financial Management	• Department of General Administration
• Department of Corrections	• University of Washington
• Washington State University	• Central Washington University
• Washington State Historical Society	• Department of Natural Resources
• House Capital Budget Committee	• Senate Ways & Means Committee
• Office of the Attorney General	• Department of Transportation
• Associated General Contractors	• Private A/E Consulting Firms
• The American Institute of Architects (Washington)	• State Board for Community and Technical Colleges
• Department of Social & Health Services	

As a starting point for this study, the Committee considered the following questions in defining its goals and objectives:

- What were the events and perceptions that led to the adoption of this legislation?
- What statistical background or historical information is available to test the perception that state projects have a high degree of risk?
- How can agencies manage risks?
- What recommendations can the Committee present to the Legislature?

The Committee focused its efforts on issues that can be controlled or influenced by state agencies. It did not address the responsibilities of the consultants or contractors, but rather on agencies' roles in managing a successful project.

Case Studies

In assessing the state's experience with construction projects, the Committee found that the number of projects that run into difficulty and result in large claims is relatively small compared to the number of projects the state implements every year. The Department of General Administration, for example, handled over 2,206 projects valued at over $2 billion in the ten-year period ending in 1998. The amount of claims paid over the same period of time amounted to $8.4 million, or approximately *four-tenths of 1 percent* of the total construction value. However, because state projects are subject to public review, those that do encounter difficulties receive a considerable amount of attention.

As part of its study, the Committee examined three major projects in which cost increases or legal claims occurred. Consideration was given to the type of conflicts encountered with each project, how these conflicts were resolved, and the lessons learned. The following three project commentaries were provided by the agency in each project.

Washington State University
Veterinary Teaching Hospital

Washington State University's (WSU) new Veterinary Teaching Hospital was completed in 1997 at a cost of $39 million, following ten years of planning and construction. A mediated settlement to claims made by the contractor cost the state an additional $3.3 million. Key events in the project's development history include the following:

- Although programmed as a $40 million project, the new hospital was initially funded at $28 million. In response to the reduced budget, WSU planners called for using existing hospital equipment to help reduce costs. Supplemental state funding for new hospital equipment, which increased the budget to $39 million, was appropriated after the hospital construction was well along. A number of construction modifications were required to accommodate the changed equipment systems.
- Late in the hospital design, WSU secured a $21 million federal grant to develop a contiguous Animal Disease Biotechnology Facility, using the new hospital as the state funding match. Accelerated development of the second project on the same site required changes to the hospital design and delayed its construction start. This delay placed additional pressure on a tight project schedule that was already driven by hospital accreditation deadlines.
- When competitive bids were received in 1993, the first- and second-lowest bidders were disqualified on technical grounds. The fourth-lowest bidder successfully enjoined WSU from accepting the third lowest bid, which was technically responsive. The university was forced to re-bid the project for reasons that had no bearing on budget, constructability, or bidder capability. The original fourth-lowest bidder submitted the lowest re-bid and was awarded a construction contract in October 1993. The forced re-bid increased project costs and created a five-month delay, pushing the start of construction beyond the seasonal weather window.
- The contractor was unable to coordinate the construction, causing subcontractors to perform their individual work for their singular benefit rather than working as part of a

well-organized team. The contractor was also unwilling to provide required construction scheduling. The university ultimately developed its own schedule analysis to monitor job progress and to evaluate impacts being claimed by the contractor.

- As unresolved contract issues began to accumulate, the contractor repeatedly rejected WSU's offers to submit them to a Dispute Resolution Board. Instead, the contractor filed a $9 million lawsuit, claiming damages allegedly caused by delayed changes in the project. WSU rejected the claim, on advice from the Attorney General's Office, on the basis that the contractor's allegations were not supported by the facts of the case. A mediated settlement was eventually reached in 1997, awarding the contractor $3.3 million against the $9 million claim. WSU accepted the settlement as a less costly alternative to the litigation expenses that it would have otherwise incurred.

Washington State Historical Society
Washington State History Museum

Construction of the Washington State History Museum in Tacoma was completed in 1996 for a total construction cost of $22.6 million. Immediately following the completion of the building construction, a subsequent $10 million contract was awarded for the installation of the museum exhibits. Below is a summary of the issues and events that led to the contract dispute and final negotiated settlement of $1.23 million.

- This project was a complex building to construct, with highly technical building systems and many requirements for coordination with the subsequent installation of museum exhibits. Design of the exhibits by the Historical Society's consultant occurred after the building was designed and construction started. Numerous change orders were issued during the course of construction to adapt to the specific installation needs of museum exhibits. These change orders were issued to accommodate the building interface with the exhibit requirements at the least cost and time for the state. These changes, however, extended the time required to complete the building.
- The discovery of contaminated soil on the site during the early stages of construction delayed the contractor, pushing the site work and building schedule into a period of inclement weather. In addition, requirements of the food service vendor could not be identified within a timeframe to allow for the café design to proceed as assumed in the contractor's bid.

In response, the contractor presented a request for equitable adjustment in the amount of approximately $5 million. The state agreed that the contractor had legitimate concerns, but believed the costs were overstated. When negotiations failed to reach a resolution, both sides agreed that an independent panel comprised of three experts in public works construction should hear the issues and recommend a final settlement figure. The independent panel recommended a full and final settlement figure of $1.23 million. This was accepted, bringing closure to all disputed issues.

Department of Corrections
Airway Heights Correctional Center

This example illustrates how the state has initiated a successful claim against a consultant and contractor to recover financial losses due to errors in design and construction.

In 1995, only two years after the substantial completion of the Airway Heights Correctional Center, the buried chilled water lines throughout the site failed. The Department of Corrections (DOC) first repaired the lines on an emergency basis, then replaced them. DOC believed that the problem was the result of both inadequate design and poor quality workmanship during installation. The agency set out to prove that the consultants had some liability for the design and that the General Contractor/Contract Manager (GC/CM) had responsibility for the design review and construction quality control. DOC filed a lawsuit before the statute of limitation expired. Mediation occurred in January 1998 and a settlement was reached in favor of the state. A total of $2.7 million was awarded to the state, and the consultants and the GC/CM shared payment of this award.

Factors That Affected Project Outcome

In reviewing these examples it becomes apparent that there are common factors and events that impacted the outcome of each project. These can be summarized as follows:

- Overly lengthy programming and design phases.
- Departmental program realignment and growth, which resulted in project program change.
- Changes in project scope and budget during design and construction.
- Poorly defined or unrealistic project program, scope, budget or schedule at the beginning of the project.
- Overextended design team resulting in incomplete documents.
- Lack of attention to project relationships and failure to develop a project attitude that reduces adversarial relationships.
- Inexperience by architects, engineers, general contractors, and subcontractors in Washington public works.
- Design errors and omissions.
- The contractor's refusal to support cooperative and timely resolution of disputed issues.
- The contractor's failure to coordinate and manage the construction.
- Unyielding schedule requirements for owner occupancy and use.
- Construction phasing resulting in very lengthy and extended construction duration.
- Lack of surge space contributing to project complexity.
- A restrictive project schedule resulting from design and bidding delays.
- Unusually long times for securing required permits such as zoning, building, environmental, and electrical permits.
- Lack of a firm schedule and absence of ongoing monitoring of project progress or delays.
- Last minute addition of major equipment that caused major design changes and, hence, delays.
- Conflicting interpretations of contract document requirements.

- Lack of timely resolution of issues.
- Issuance of numerous change orders, resulting in added cost and time.
- Restrictive bidding requirements that disqualified capable bidders.
- Public works laws that require owners to award a contract to a low bid contractor who is only marginally qualified to perform the project successfully.

Section 3

Risk Management Issues in Washington State

THE CASE STUDIES CITED in the previous section provide an indication of the various factors that can lead to problems in capital construction projects. Slipping time schedules, changes in scope and project design, contract disputes - these problems are not unique to state construction projects. The Risk Management Committee did, however, identify a number of special challenges facing Washington State agencies and institutions, beginning with the lack of a comprehensive strategy for managing these risks. In developing its recommendations, the Committee examined the management practices employed by both state agencies and the private sector to reduce the likelihood of conflicts and legal claims on capital construction projects.

Key Elements in Reducing Risksy

In the course of its study, the Committee identified 11 key elements, listed below, that can reduce risks and avoid unnecessary costs.

1. Project definition is established early and locked down.
2. Project responsibilities are clear and coordinated.
3. Adequate construction administration services are included in the contract with consultants.
4. Project staff in both the agency and the consultant's office are experienced in the management of capital projects and public works construction in Washington State.
5. Project scope, schedule, and budget are balanced and determined at outset and reviewed regularly during the project.
6. Differences and disputes are resolved immediately.
7. A systematic and thorough review of construction documents is performed before bidding the project.
8. Key issues are identified and resolved before agreement is signed between consultant and the agency.
9. The construction schedule with a Schedule of Values is periodically updated and used.
10. All project team members have the authority to make timely and firm decisions.
11. Decision makers are aware of dispute avoidance practices and expedite resolution of confrontational issues.

The Committee then looked at ways the state can improve in these areas, as shown.

Key Risk Management Issues in State Construction Projects

	___ Suggested Remedy ___				
Current Situation	Standardized Process	Training	Hiring	Experience	Legislation
1. No global and uniform methodology to deal with risk on state projects.	**X**				
2. Need for consistent staff development and training.	**X**	**X**			
3. Project Management qualifications and expertise not consistent across agencies.	**X**	**X**	**X**		
4. Agencies are empowered to handle projects differently. This leads to different interpretations of contractual relationships (Agency vs. Consultants vs. Contractors).	**X**	**X**			
5. The state needs more flexibility to hire and retain qualified, high caliber Project Managers.		**X**	**X**	**X**	
6. Some agencies do not have a formalized Project Management Procedures Guidelines or Manuals.	**X**	**X**			
7. Need for a stronger forum to discuss, share, and disseminate project management information to spread the knowledge base and ensure consistency.	**X**				
8. The need for distributing Standard Procedures Manual to the contracting industry.	**X**				
9. The need for a standardized process which would result in common documentation and	**X**				

	___ Suggested Remedy ___				
procedures manuals, guidelines and training to be used by all agencies.					
10. Need for training on the use and limitations of Payment and Performance Bonds and other insurance documents.	**X**	**X**			
11. Need for a sequential list of events in the life of a project flagging potentially risky situations.	**X**	**X**		**X**	
12. Need for Project Management training programs (continuing education).		**X**			
13. Ability to anticipate and avoid risk depends on the skills, experience and the tools available to the Project Manager.		**X**	**X**	**X**	
14. A possible source of difficulties on a project is the lack of continuity due to the length of time it takes to implement a project.					**X**
15. Experience of owner and consultant.			**X**	**X**	

Current Trends in Risk Management

In developing its recommendations, the Committee considered current risk-management practices by state agencies as well as trends in the construction industry. While discussions ranged from contracting procedures to changes in construction technology, the Committee focused on several key issues.

The Role of the Owner

The success of a construction project is ultimately the responsibility of the owner, in this case the state agency or institution that initiates the process. Initially, all risks associated with a project fall on the owner. However, the owner cannot design and build the building or project alone. A project team is formed to carry out various essential functions. Owners arrange for risks to be allocated and shared among the members of the project team, and team members are

remunerated for accepting a share of these risks. Risk is always factored into the cost and team members may attach a price to events that may never occur.

Factors that affect the level of risk in a project include the owner's:

- Experience, clarity and flexibility in establishing project parameters.
- Approach to making decisions and resolving differences.
- Understanding the allocation of risk in construction contracting and the willingness to compensate design and construction professionals for the risks they are asked to assume.
- Knowledge and understanding of the state's public works process.

As project owners, state agencies must keep pace with today's fast-changing business climate and developing technologies. In this regard, private companies have certain advantages over agency project managers. While private companies can develop an expertise in one type of project or another, agencies must respond to a variety of public needs. There are clear indications that the private sector, especially the general contractors, are far outpacing the ability of state agencies to adapt to the changing requirements of the construction industry.

Training and Experience

This topic points to the importance of training and experience as an element in the state's risk-management strategy. Nine of the 15 risk issues noted on the previous page relate to the experience and training of state employees and those in the private sector involved in a project. Building an experience base requires discipline to set practical goals, develop the capabilities needed to achieve the goals, and build a body of experience in accordance with the agency's goals. For design professionals, the key capability is human talent, requiring the firm to attract, educate, deploy, and retain the staff resources needed to practice well.

For the state, there are many factors that make building a base of experience a challenge. The experience developed in an agency on today's small project may not be of sufficient magnitude to be used readily on a future project within that agency. Not all firms or agencies can be "experienced" at all times. New professionals join the group and others leave. Firms take on new clients and project types. Owners handle new types of projects. New technologies emerge.

Currently there appears to be no formalized training programs or project management procedures in use by agencies. It appears that most knowledge is based on existing personal memory built over the years and the intuitive abilities of project managers and their supervisors. It is therefore essential that state agencies develop and nurture experienced employees. Although the private sector can pick new clients and select projects to build on existing experience, this luxury is not available to all state agencies. Therefore, the Committee believes it is essential that the state develop a central, coordinated approach to collect and disseminate the knowledge gained from one agency's experience to another, and to provide continuous training to all agency personnel involved in managing construction projects.

Project Parameters

A key to assessing and managing project risks is the clarity, coordination, and consistency among key project parameters: scope, quality, schedule, and construction budget. Sometimes these factors are vague, or they may be too specific. Moreover, they may be inconsistent with each other, perhaps as a result of the many twists and turns some projects take as the agency finally gains the financial and regulatory approvals needed to proceed.

Responsibility for clarity and consistency begins with the owner when project parameters are defined and contracts are entered into with design professionals to implement the projects. When the owner establishes project parameters, it is the design professional's task to evaluate it and advise the owner when the project parameters are unclear, incomplete, or inconsistent. Not all consultants fully understand this responsibility. In the interest of keeping the owner satisfied, designers may attempt to anticipate or interpret owner needs, often incorrectly.

Continuous Monitoring

Current management practice reinforces the importance of "paying attention" to the needs of the project. Committee members felt that special attention needs to be given to design investigation and documentation on the one hand and carry-through into construction on the other. The latter includes the design professional's involvement in construction contract administration, careful coordination of project agreements during the construction phase, and effective on-site observation and management. These factors remind us that, to be effective, risk management begins in the planning phase and the structuring of the project team, and continues through every step along the way through to completion of the project. More importantly, the scope and budget of the project should be fixed early enough in the design process to establish commonly accepted performance measures.

Agreements and Responsibilities

There is no ideal method of equipping project managers or design professionals to provide services as efficiently as possible while minimizing contract disputes and claims. There are, however, some guiding principles for structuring reasonable agreements and managing projects.

- Determine who is in the best position to carry each responsibility and assign responsibility accordingly. Simply shifting risk to a party that is not capable of managing the risk or hoping that the risk is covered by insurance is counter-productive and unreasonable.
- Link responsibilities with the authority to fulfill them. Even if someone is in the best position to carry out a responsibility, it is important that this person is also *empowered* to do so. Having the authority to do something about a situation is a basic principle of accountability.
- Assign each responsibility to only one party. People sometimes assume that if multiple parties are given responsibility for a specific duty, the likelihood of that obligation being fulfilled increases. In fact, co-responsibility creates more problems that it solves. There

should be one single point of contact within the agency on any project from inception to completion. This will help to assure consistency and pride of ownership.

Regardless of how responsibilities are assigned, it is essential that all employees maintain a constant awareness of possible project risks and work to mitigate these risks. One way of increasing risk awareness is to enlist employee teams, like those used in quality management efforts, to describe possible risk exposure, suggest prudent responses, and accept risk ownership. Building risk awareness assures that employees continuously think about cost and changing risk parameters.

The Principle of Partnering

Communication between all parties is a key element in lowering the potential for delays or claims in construction projects. One way to establish effective communication from the outset of a project is through "partnering," whereby the project owner and the contractor agree to a structured approach for resolving problems that might arise during the course of construction.

What is Partnering?

Partnering, in the context of this report, is not intended to be a formal structure as commonly understood in the construction industry. Rather, it is a way of anticipating and resolving problems before they escalate into a major dispute. It is also quite different from dispute resolution, which usually involves a Dispute Resolution Board (DRB), arbitration, mediation, or litigation. Whereas dispute resolution is primarily designed to mitigate damages that have already occurred, partnering is an arrangement between the owner and contractor - often adversaries in the construction process - to work together to avoid disputes. Partnering is especially suited to the construction process where multiple parties on a project are the norm, and has been found to help facilitate resolution of issues as they become apparent.

Limitations on Partnering

The Committee recognizes that there are practical constraints in establishing partnering agreements in public projects. The selection of the design professional may not be made early in the process; likewise, it may not be known at the very start of the process who the contractor will be because of the open bidding process. While these limitations are unavoidable, the owner can begin the partnering process by letting it be known from the start that non-adversarial approach will be a basic component of the selection process and then implement the relevant steps as the involved parties are identified.

Experience suggests that at regular intervals the team members should meet to evaluate the progress of the project, to discuss "hard spots" that may have developed in the relationship, and to work through them. This approach requires a strong commitment at the highest executive level of each part of the team. In this system, any problems that cannot be resolved at the working level should be taken to the next higher level of authority. Inaction should not be an acceptable option; team members cannot choose not to make a decision.

Section 4

Conclusions and Recommendations

THERE IS, OF COURSE, NO MAGIC SOLUTION that will ensure risk-free projects. Individual circumstances vary widely from one project to the next, and project managers must always be prepared to adapt to changing conditions. The Committee and professionals in the design and construction industry do, however, agree on a number of fundamental ways to reduce - and avoid - risks involved in any capital construction project. Agency administrators and legislators are advised to look closely at factors involving hiring, experience, qualifications, training, and remuneration of project managers. There should also be a consistent strategy to share procedures and experience throughout state government.

The Risk Management Committee is making 10 recommendations designed to create a framework by which state projects can be delivered in a consistent, predictable, efficient, and cost effective method. Most of these recommendations can be implemented by administrative action, and none suggest policy changes that would appear to be controversial.

The changes that are easiest to implement in the shortest period of time are listed first. These "quick fixes" will probably generate the most immediate results, but also are the least visible in the public eye. These are followed by longer term administrative measures that will likely require more time to plan and execute. Recommendations requiring legislation are listed last and may also require some time to put into action. There may be costs associated with some of these recommendations, but the Committee anticipates that the payback will far exceed the state's investment.

Near-Term Administrative Actions

1. Define Project Scope

One of the major reasons for increased project cost and time is "creep" in the scope of the project. The Committee recommends that agencies implement measures that will ensure the clear definition of the scope which will be clearly and firmly established at the point of design appropriation. Management must recognize that budgets need to be monitored simultaneous to the development of the design and contract documents. Changes to the scope have an immediate effect on the budget that must be recognized, evaluated, and addressed openly to control increases in costs. It is recommended that the budget be fixed when the Governor and the Legislature approve the design appropriation. In those circumstances where project scope must unavoidably change, the agency should immediately notify OFM and legislative staff so all can work together to find a solution.

2. Reconfigure Training Programs

Reconfigure current training programs for project management to be consistent and directed at developing specific skills. The Committee also recommends that some training programs be conducted by recognized Project Management and Risk Management organizations. This will ensure that project managers are trained in the specialized field of project management. A central

coordinating process to be established as described in Recommendation 8 will implement this recommendation.

3. Adopt Partnering as a Standard Approach

The Committee recommends that the principles of partnering become a standard approach for doing business on state projects. Although this approach is partially achieved through the General Contractor/Contract Management (GC/CM) method of project delivery, partnering can also be applied to normal Design/Bid/Build projects if sufficient emphasis is put on dispute avoidance as opposed to resolution after the fact. Partnering in this case refers to an informal but active communication process to be followed on all projects rather than the formal partnering definition commonly used in the construction industry.

4. Empower Staff

Equip project managers with the authority to make decisions to expedite a project within a previously approved range of limitations. Exercising authority and achieving success in public projects are motivational factors that can help offset the financial incentives that often attract current staff to move to the private sector.

5. Increase Accountability and Responsibility

Along with empowerment comes responsibility and accountability. Project managers would be held responsible for keeping a project on track according to an approved budget, scope and schedule. It is also recommended that agencies institute a "single-source responsibility" within the agency from the inception of a project to completion.

Longer-Term Administrative Actions

6. Make Pay Scale Competitive

As a first step in ensuring that competent staff remains within the agencies, the Committee recommends adjusting the pay scale of capital staff to be competitive with the private sector. The state should also consider hiring professional project managers who are trained in this field.

7. Require Certified Training

A project manager's current credentials do not guarantee future ability to handle projects effectively. The Committee recommends that the requirement for continuing education and training be an integral part of staff and supervisory development. Training should be certified by recognized professional project management associations which can attest to the project manager's abilities.

8. Promote Consistency in Staff Training

To achieve consistency, the Committee recommends establishing a coordinated methodology to organize and deliver training programs for the staff. This will promote consistency across the agencies on common issues dealing with the capital program. This coordinated approach will also facilitate assembly and distribution of technical and administrative "bulletins" containing critical information for those dealing with capital projects. The goal is to ensure the wide distribution of individual experiences and recommendations that will aid in standardizing the delivery of capital projects. Actions necessary to accomplish this are discussed below:

- Create a central repository and distribution point, within the Department of General Administration, for information and knowledge that can improve design and construction projects and practices. Bulletins would publish "best practices" for both plant operations and public building designs as well as other important and timely project management process issues of common interest to all agencies.
- Create a single committee to coordinate state contracting documents and define its role to include coordinating and overseeing a statewide training program on claims resolution or mediation techniques for project managers and staff claims specialists. As it stands now, two task forces have the task of coordinating state contracting documents. The General Conditions Committee works regularly on improvements to construction contracts and related documents. The Architects/Engineers/Agencies Committee works on Consultant Agreement forms.

Proposed Statutory Changes

9. Establish 'Responsible Bidder' Criteria

For all public works projects, the Legislature should consider instituting a statute similar to Chapter 47.28 RCW, which allows the Department of Transportation to pre-qualify general contractors on major projects. The Legislature should also consider adding criteria for "responsible" bidders on public works projects, similar to criteria used in awarding goods and services contracts. RCW 43.19.1911 states that public agencies are responsible for awarding contracts to the "lowest responsive bid submitted by a responsible bidder." Laws defining the process for acquiring goods and services in the state list criteria for determining whether a contractor is responsible whereas no such definition exists in public works laws. Adding a definition of responsibility to the public works laws as a basis for disqualification would be a very powerful tool for the state to deal effectively with unscrupulous or incapable contractors who continually abuse the system.

Examples of criteria for disqualifying bidders might include:

- Lack of a state registration and professional license for contractors.
- History of non-payment of prevailing wages, state taxes, or unemployment insurance.
- History of discriminatory practices.
- Previous instance of non-payment of monies due to subcontractors or material suppliers.
- History of using unlicensed subcontractors.

- History of unauthorized substitution of materials or failure to perform contract obligations on previous state jobs.
- Providing false or incomplete information on bidding or payment documents.
- History of bond forfeiture or default on state contract.
- Pending proceedings on bankruptcy, insolvency, or criminal charges.
- History of violations of safety regulations applicable to the project.

10. Expedite the Permitting Process

The Committee recommends looking at ways to reduce the time it takes to obtain permits from other government agencies, counties, and municipalities. This process varies widely from region to region across the state and in some cases is entirely too cumbersome. The resulting delays ultimately cost the taxpayer large sums of money in increased construction costs as well as staff time and frustration.

A Starting Point

The findings and recommendations of this report are intended to serve as a starting point. More work is needed to develop these recommendations into a working plan that will be supported by the Legislature as well as all agencies. The Office of Financial Management and the majority of agencies and institutions are already discussing some of these recommendations with the intent of implementing them as part of an integrated plan. The Committee recognizes that the successful application of all of these recommendations will require flexibility and practical judgment to reflect the different projects and issues faced by the different agencies.